

### **REMARKS**

The Official Action mailed November 20, 2006, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on March 16, 2001; January 7, 2005; and March 23, 2006.

Claims 2-12 were pending in the present application prior to the above amendment. Claims 2, 6 and 11 have been amended to better recite the features of the present invention. Accordingly, claims 2-12 are now pending in the present application, of which claims 2, 6 and 11 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 3 of the Official Action rejects claims 2, 3, 6, 8 and 11 as anticipated by U.S. Patent No. 6,081,228 to Leimer. The Applicant respectfully submits that an anticipation rejection cannot be maintained against the independent claims of the present application, as amended.

As stated in MPEP § 2131, to establish an anticipation rejection, each and every element as set forth in the claim must be described either expressly or inherently in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Independent claim 2 has been amended to recite a detected decoding error rate being one detected when a received C/N exceeds a first predetermined threshold value. Independent claim 6 has been amended to recite means for detecting a decoding error rate of a digital signal at a time when a detected C/N exceeds a first predetermined threshold value. Independent claim 11 has been amended to recite determining whether a detected received C/N exceeds a first predetermined threshold value; when the received C/N is determined to exceed the predetermined threshold value. Further,

independent claims 2, 6 and 11 have been amended to recite that a means for setting or selecting a carrier regenerative loop characteristic operates so that (i) if the detected decoding error rate is equal to or less than a second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise (e.g., graph a in Figure 5) having a rapid variation property is set up and (ii) if the detected decoding error rate exceeds the second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise (e.g., graph c in Figure 5) having a gentle variation property. These features are supported in the present specification, for example, by Figures 2 and 5. For example, at page 12, line 20, to page 15, line 9, the present specification provides the following description:

At an initial state, that is, when a receiving state is not in a normal receiving state, it is controlled for the burst symbol reception and the loop filter 9 is controlled for the enable state and then the filter factor of the loop filter 9 is set to the characteristic where the characteristics of the carrier regenerative loop correspond to the characteristic c of Figure 5 (step S1). Following the step S1, a received CNR is determined from the CNR data and a waiting is made till the determined CNR becomes 15dB. When the determined CNR becomes 15dB (step S2), a transmission and multiplexing configuration control (TMCC) pattern is decoded (step S3) and a presence of the 8PSK signal is confirmed (step S4). ...

In the step S8, when the detected bit error rate is recognized to be better than the predetermined bit error rate for the received CNR, that is, when the detected bit error rate is recognized to be equal to or less than  $5.5 \times 10^{-3}$ , the phase noise characteristics of the ODU connected to the receiver are determined to be fairly good so that the filter factor of the loop filter 9 is set to the characteristic where the characteristics of the carrier regenerative loop correspond to the characteristic a of Figure 5. ...

In the step S8, when the detected bit error rate is recognized not to be better than the predetermined bit error rate for the received CNR, that is, for example, when the detected bit error rate is recognized to be more than  $5.5 \times 10^{-3}$ , the phase noise characteristics of the ODU connected to the receiver are determined not to be good so that the characteristics of the carrier regenerative loop are restored to the characteristic c of Figure 5 (step S11) and the burst reception mode is released, thereby executing the normal reception mode to start the normal reception (step S13).

In short, in the present invention, first of all, it is detected whether a received CNR exceeds a predetermined threshold value (e.g., 15dB), and when the received CNR exceeds the predetermined threshold value, the bit error rate is further detected, and if the detected bit error rate is equal to or less than a predetermined threshold value (e.g.,  $5.5 \times 10^{-3}$ ), a carrier regenerative loop characteristic is set at a characteristic a (shown in Figure 5), and otherwise the carrier regenerative loop characteristic is set at a characteristic b or c (shown in Figure 5). In one preferable embodiment, the correspondence relationship between the bit error rate and the carrier regenerative loop characteristic is as follows:

<u>Bit Error Rate</u>	<u>Carrier Regenerative Loop Characteristic</u>
$6.8 \times 10^{-3} \sim$	c
$5.5 \times 10^{-3} \sim 6.8 \times 10^{-3}$	b
$4.5 \times 10^{-3} \sim 5.5 \times 10^{-3}$	a
$\sim 4.5 \times 10^{-3}$	a

The Applicant respectfully submits that Leimer does not teach that a means for setting or selecting a carrier regenerative loop characteristic operates so that (i) if the detected decoding error rate is equal to or less than a second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a rapid variation property is set up and (ii) if the detected decoding error rate exceeds the second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a gentle variation property, either explicitly or inherently.

Since Leimer does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102 are in order and respectfully requested.

Paragraph 4 of the Official Action rejects claims 4, 5, 7, 9, 10 and 12 as obvious based on the combination of Leimer and U.S. Patent No. 5,572,516 to Miya. The Applicant respectfully submits that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present application, as amended.

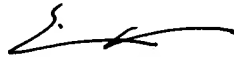
As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Please incorporate the arguments above with respect to the deficiencies in Leimer. Miya does not cure the deficiencies in Leimer. The Official Action relies on Miya to allegedly teach the features of the dependent claims. Specifically, the Official Action relies on Miya to allegedly teach that "it is well known to transmit PSK modulated signals in GPS systems" (page 3, Paper No. 20061115). However, Leimer and Miya, either alone or in combination, do not teach or suggest that a means for setting or selecting a carrier regenerative loop characteristic operates so that (i) if the detected decoding error rate is equal to or less than a second predetermined threshold value, a

carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a rapid variation property is set up and (ii) if the detected decoding error rate exceeds the second predetermined threshold value, a carrier regenerative loop characteristic corresponding to a critical CNR by a phase noise having a gentle variation property. Since Leimer and Miya do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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